

**Remarks:**

Applicant has carefully studied the final Examiner's Action mailed March 9, 2010 (hereinafter "the Action"). Applicant thanks the Examiner for their careful attention in reviewing the application. The amendments appearing above and these explanatory remarks are believed to be fully responsive to the Action. Accordingly, this important patent application is now believed to be in condition for allowance.

***Status of the Claims***

Claims 1-2, 4, 7, 10, 12-17, 19, and 20-30 were pending in the Office Action mailed March 9, 2010. Claims 1, 2, 7, 10, 13, 14, 15, 17, 20, 22 and 29 have been amended. Support for the amended claims can be found in the original specification and figures, specifically paragraphs [0087-0090]. Claim 23 has been canceled. Claim 31 has been added. Support for this claim can be found in the paragraphs [0087-0090]. Therefore, claims 1-2, 4, 7, 10, 12-17, 19, 20, 22 and 24-31 are currently pending and under examination.

***Claim Objections***

The Office has objected to claim 23 as being identical to claim 22. Applicant gratefully thanks Examiner. Applicant has cancelled claim 23. Applicant respectfully requests the withdrawal of the objection to claim 23.

***Claim Rejections - 35 U.S.C. §112, first paragraph***

The Office has rejected claims 1-2, 4, 7, 10, 12-17, 19-20 and 22-30 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Office states that the limitation of administering "about 6 million cells" to a patient is not disclosed within the specification. The Office states that the disclosure as originally filed provides support for more than 6 million cells and further states that Applicant has clearly contemplated administering cells with no upper limit on the total number of cells. In response to the Office's statements, Applicant has amended claims 1, 7, 10, 13-15, 17 and 20 to recite administering "at least 6 million" cells. In light of the foregoing amendment, Applicant respectfully requests the

withdrawal of the rejection under 35 U.S.C. §112, first paragraph as to claims 1-2, 4, 7, 10, 12-17, 19-20 and 22-30.

### ***Claim Rejections – 35 U.S.C. §103(a)***

The applicant acknowledges the recitation of 35 U.S.C. §103(a).

All claims depend, directly or indirectly, from claims 1, 7, 10, 13, 14, 15, 17 or 20. Therefore, if claims 1, 7, 10, 13, 14, 15, 17 and 20 are found to be non-obvious under 35 U.S.C. §103(a), then all claims which depend therefrom are non-obvious as a matter of law. (*See e.g.* M.P.E.P. §2143.03). Accordingly, and without conceding the propriety of any asserted rejection, Applicant shall forego a detailed analysis of any claim depending from an independent claim shown to be nonobvious. The absence of additional patentability arguments should not be construed as either a disclaimer of such arguments or that such arguments are not believed to be meritorious.

### **Weiss in view of Sanberg 1997 and Grabowski:**

Claims 1, 2, 4, 17, 20, 22-28 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,851,832 to Weiss (hereinafter “Weiss”) in view of Sanberg et al. (1997. Soc. Neurosci Abstr 23(1-2):346, abstract 140.9) (hereinafter “Sanberg 1997”) and Grabowski et al. (1994. Exp Neural. 127(1):126-136) (hereinafter “Grabowski”). Applicant respectfully traverses this rejection on the grounds that one or more elements are missing from the cited combination.

*Weiss fails to teach the administration of at least 6 million hNT neuronal cells within three hours of cell preparation as well as delivery of the cells to at least one tract in an area inferior to the stroke, within the midportion of the stroke and in an area superior to the stroke and Sanberg 1997 and Grabowski fail to resolve that deficiency*

Amended claim 1 is directed to “[a] method of treating stroke in a human who has undergone a stroke, said method comprising delivering at least 6 million viable hNT neuronal cells *within three hours of cell preparation* to a plurality of brain area sites involved in the stroke *wherein the cells are delivered to at least one tract in an area inferior to the stroke, within the midportion of*

*the stroke and in an area superior to the stroke.”* (emphasis added) The combination of Weiss, Sanberg 1997 and Grabowski fails to disclose the limitations of delivering the cells in at least one tract to an area inferior to the stroke, within a midportion of the stroke and in an area superior to the stroke. Given that none of the references nor their combination discloses these limitations, the cited combination cannot be said to obviate.

*Weiss fails to teach the administration of at least 6 million hNT neuronal cells within three hours of cell preparation and Sanberg 1997 and Grabowski fail to resolve that deficiency*

As a preliminary matter, the Office states on page 4 of the Action that Weiss teaches methods of treating diseases, including stroke, by the administration of the progeny of *human* neural stem cells. (emphasis added) Applicant respectfully reiterates that Weiss does not teach the administration of **human** neural stem cells as claimed by the Office but rather teaches the administration of **mice** neural stem cells. Example 45 specifically states that the neural tissue was obtained from normal embryonic or adult mice and that neurospheres were generated from these cells. (col. 61, lines 50-60) Applicant respectfully submits that Weiss is not enabled for the treatment of stroke because the cells that were administered in Example 45, which the Office has used to base its rejection, were injected into **normal healthy mice/rats**, not mice/rats that have undergone stroke. Further, Applicant respectfully submits that Weiss is not enabled for the treatment of stroke in humans. The disclosure of stroke in Weiss is a prophetic example. No actual studies were conducted on humans and the disclosure of stroke in column 64, lines 12-21 refers only to a prophetic example of stroke. Given the differences between species, the administration of mice neural stem cells cannot be said to be equivalent to the administration of human neural stem cells.

None of the references nor their combination discloses the delivery of at least 6 million cells within 3 hours of their preparation. Weiss explicitly states in Example 45 that the cells are prepared 16 hours prior to transplantation. (col. 61, lines 60-61) Sanberg 1997 and Grabowski do not disclose time periods after cell preparation for the administration of the cells. Given that the cited combination does not disclose, and Weiss explicitly teaches away from, the administration of cells within 3 hours of preparation, the cited combination cannot be said to obviate.

With regard to the administration of at least 6 million cells, the Office uses the teachings of Sanberg 1997 to overcome the shortcomings of Weiss with respect to the use of hNT cells. Sanberg 1997 states that administration of between 20,000 and 40,000 hNT cells, with 40,000 cells being the optimal dose, is effective to restore behavioral functions in ischemic rats. The Office states on page 6 that assuming a rat weighs 0.3 kg and a person weighs 75 kg, if the dose were scaled up based on body weight, then 40,000 cells administered to a 0.3 kg rat would correspond to 5 million cells administered to a human. Applicant respectfully asserts that the administration of 40,000 cells to a 0.3 kg rat would not correspond to 5,000,000 cells as asserted by the Office.

The Office further states on page 6 that the Examiner took official notice of these weights at the final paragraph of page 4 of the office action dated February 6, 2009. Applicant has reviewed the Office Action dated February 6, 2009, specifically the page and paragraph mentioned, and respectfully traverses that official notice was taken. While the cited paragraph states the assumptions of weights by the Office, nowhere in the paragraph or in the Office Action does it state that official notice was taken as to these assumptions. Applicant respectfully submits that in the 132 Declaration submitted by Dr. Wechsler on May 27, 2008, he specifically contradicts scaling up the dosage of cells in rodents by quantities per kilogram to the weight of an average human. Dr. Wechsler states that dosing is an art within itself and in many cases it is not sufficient to scale up on the basis of quantities per kilogram and cites a study on Parkinson's disease where the dosing from rat to human based on kilograms is not sufficient. He also states that neuroprotective drug dose ranges and toxicities in animals may not overlap with those tolerated in humans and cites to another article evidencing this fact. Applicant also respectfully traverses the recitation of average weights for rats and humans as well as the cell numbers articulated. It is well known that there are differences in average weights between genders for both rats and humans. Further there are differences in average weights between species of rats and between humans based on their country of origin. Applicant respectfully requests that if the Office wishes to take official notice of average weights and cell numbers for rats and humans that the Office provides documentation substantiating the assumptions.

Neither Sanberg 1997 nor Weiss nor Grabowski nor their combination discloses the administration of at least 6 million hNT cells to a human. Using the Office's reasoning, without

conceding the validity of the weights or cell numbers articulated by the Office, the references point to the administration of at least 10 million cells in order to be effective. This amount is almost twice the number of cells used in the present application. As stated in Sanberg 1997, the administration of 20,000 cells was only found to be effective in some of the rats thus it would not be expected that this dosage would be effective in humans. Applicant respectfully reiterates that they were the first to conduct *in vivo* experiments on human stroke patients through the use of hNT cells. The selection of at least 6 million cells was based on actual results taken from these *in vivo* human stroke patients. The number of cells administered in Sanberg 1997 that were found to be effective in rats was 40,000 cells which, by the Office's reasoning, correspond to 10 million cells for a 75 kg human. The administration of 10 million cells is twice the number of cells that were found to be effective by Applicants and thus cannot be said to be equivalent to the administration of at least 6 million cells. Applicant respectfully asserts that the cited combination fails to teach each and every limitation of the claims and thus cannot be said to obviate.

*Weiss fails to teach delivering the cells to more than one tract wherein each tract is spaced between 5 mm and 6 mm from the target stroke area and Sanberg 1997 and Grabowski fail to resolve that deficiency*

Amended claim 2 recites, *inter alia*, the method of claim 1 further comprising the step of delivering the cells to more than one tract wherein each tract is spaced between 5 mm and 6 mm from the target stroke area. The animals in Weiss received one injection in one location in one tract. Sanberg 1997 does not disclose the number of tracts through which cells were administered nor does it disclose the spacing between tracts. Grabowski transplanted tissue at two sites however, the sites are located at coordinates that are spaced in relation to the bregma, not in relation to the target stroke area. Further, Grabowski fails to disclose tracts that are spaced between 5 mm and 6 mm from the target stroke area. Given that the cited combination fails to disclose delivering cells to more than one tract wherein each tract is spaced between 5 mm and 6 mm from the target stroke area, the cited combination cannot be said to obviate.

*Weiss fails to teach waiting at least 3 months post-stroke before administering treatment and Sanberg 1997 and Grabowski fail to resolve that deficiency*

Claim 4 is directed to “the method of claim 1 wherein the stroke has taken place at least 3 months earlier.” The Office notes on page 6 that Weiss does not explicitly teach waiting at least three months between the time of stroke and the time of administration of therapeutic cells as recited in claim 4. The Office goes on to state that this deficiency is cured by both Sanberg 1997 and Grabowski taken together since Sanberg 1997 provides evidence that hNT cells are efficacious when administered one month after stroke and Grabowski provides evidence that other cells (neural grafts) are effective when administered 8 weeks after stroke. The Office acknowledges that 8 weeks is the longest time period tested by Grabowski and that Grabowski used a different cell population. The Office asserts that since Sanberg 1997 found success with a one month delay and Grabowski found success with an 8 week delay, that it would be obvious that one of ordinary skill in the art would have a reasonable expectation of success in selecting a 3 month period of delay. Applicant respectfully submits that the fact that one reference teaches the administration of cells 1 month post-stroke while another teaches the administration of a different cell type 2 months post-stroke would not lead one of ordinary skill in the art to assume that there would be a reasonable expectation of success at administering the cells at 3 months post stroke as expressly disclosed in claim. One of ordinary skill in the art would recognize that there would be an upper limit to the amount of time delay between the stroke event and the administration of cells where beyond this limit, there would be no rehabilitative effect on cognition, sensation, motor skills, or speech. Given that the cited combination of references fails to disclose the administration of cells 3 months post stroke and that the Office has failed to articulate a reasonable expectation of success in administering the cells 3 months post stroke, the cited combination cannot be found to obviate.

Further, Applicant respectfully asserts that Grabowski is concerned only with the survival of neural cell grafts. The effectiveness of the cells in Grabowski was measured as cell survival, not of actual effectiveness of the cells to rehabilitate cognitive or motor damage due to stroke. The time period disclosed in Grabowski relates only to graft survival, not measuring potential brain function. Grabowski states on page 135:

“...a delay between lesion and transplantation is desirable, and that after around 3 weeks the host brain environment is most hospitable. **Whether this holds true also concerning the capacity of the graft to form efferent connections to the host and potentially**

**affect host brain function and behavior is currently not known.** Previous work has suggested that implants of frontal cortex can improve acquisition of spatial alternation behavior in rats with medial frontal cortex lesions if graft surgery is conducted 7 or 14 days **but not 30 or 60 days after lesion.**” (emphasis added)

As shown above, Grabowski discloses only the effect of a time delay on graft survival. Grabowski specifically states on page 135 that **it is not known if the graft forms efferent connections and how this affects brain function and behavior.** (emphasis added) An implicit meaning of “a method of treating stroke” is the restoration of cognitive, motor or speech function. The mere survival of a graft does not imply restoration of cognitive, motor or speech function.

Additionally, Grabowski directly contradicts a delay of administration of 90 days as disclosed in claim 4. Grabowski specifically states that previous work has suggested that acquisition of spatial behavior can improve if graft surgery is conducted 7 or 14 days **but not 30 or 60 days** after lesion. Since Grabowski only measures graft survival, which is not equivalent to “treating stroke”, and specifically contradicts the administration of cells 90 days after stroke, one of ordinary skill in the art would not have combined its teachings with those of Sanberg 1997 and Weiss and conclude that a delay of 90 days between the stroke event and the administration of cells would have a reasonable expectation of success.

In conclusion, for the foregoing reasons, Weiss in view of Sanberg 1997 and Grabowski fails to teach each and every element of the claims in question and thus fail to obviate the present invention. It is therefore respectfully requested that the rejection of claims 1, 2, 4, 17, 20, 22-28 and 30 under 35 U.S.C. § 103(a) be withdrawn.

#### **Weiss in view of Sanberg 1997 and Grabowski in further view of Larazov-Spiegler**

Claims 1-2, 4, 17, 20 and 22-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,851,832 to Weiss (hereinafter “Weiss”) in view of Sanberg et al. (1997. Soc. Neurosci Abstr 23(1-2):346, abstract 140.9) (hereinafter “Sanberg 1997”) and Grabowski et al. (1994. Exp Neural. 127(1):126-136) (hereinafter “Grabowski”) as applied to claims 1-2, 4, 17,

20, 22-28 and 30 above, and in further view of Larazov-Spiegler 1996 (FASEB J. 10:1296-1302) (hereinafter “Larazov-Spiegler”) Applicant respectfully traverses this rejection on the grounds that one or more elements are missing from the cited combination.

Applicant submits that the rejection under 35 U.S.C. § 103(a) is improper for reasons of record as presented above with respect to the rejection of claims 1, 2, 4, 17, 20, 22-28 and 30 over the Weiss patent in view of Sanberg 1997 and Grabowski. The Office notes on page 8 that Applicant did not traverse the Office’s determination that performing the additional step recited in claim 29 would have been obvious in light of the disclosures by Larazov-Spiegler. Applicant respectfully submits that if an independent claim is found to be non-obvious then any claim depending therefrom is non-obvious as a matter of law thus Applicant is not required to traverse dependent claim 29 since claim 29 depends from independent claim 20. Therefore, if claim 20 is found to be non-obvious under 35 U.S.C. §103(a), then all claims which depend therefrom are non-obvious as a matter of law. (*See e.g.* M.P.E.P. §2143.03).

In conclusion, for the foregoing reasons, Weiss in view of Sanberg 1997 and Grabowski in further view of Larazov-Spiegler fail to teach each and every element of the claims in question and thus fail to obviate the present invention. It is therefore respectfully requested that the rejection of claims 1, 2, 4, 17, 20, 22-30 under 35 U.S.C. § 103(a) be withdrawn.

**Sanberg 1996 in view of Sanberg 1997 in further view of Weiss and Uchida:**

Claims 7, 10, 12-17 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sanberg et al. (1996. Soc. Neurosci. Abstr. 22(1-3):578, abstract 232.9) (hereinafter “Sanberg 1996”) in view of Sanberg (1997. Soc. Neurosci. Abstr. 23(1-2):346, abstract 140.9) (hereinafter “Sanberg 1997”) in further view of U.S. Patent 5,851,832 to Weiss et al. (hereinafter “Weiss”) and Uchida et al. (1995. Exp. Neurol 132:194-208) (hereinafter “Uchida”). Applicant respectfully traverses this rejection on the grounds that one or more elements are missing from the cited combination.



Applicant submits that the rejection under 35 U.S.C. § 103(a) is improper for reasons of record as presented above with respect to the rejection of claims 1, 2, 4, 17, 20, 22-28 and 30 over the Weiss patent in view of Sanberg 1997 and Grabowski.

*Sanberg 1996 fails to teach the administration of at least 6 million hNT cells within 3 hours of cell preparation to improve speech in a person who has experienced brain damage due to a stroke and Sanberg 1997 in view of Weiss in further view of Uchida fail to resolve that deficiency*

Amended claim 7 recites, *inter alia*, a **method of improving speech** in a person who has experienced brain damage due to stroke by injecting a sterile composition of at least 6 million hNT cells within three hours of cell preparation into a plurality of brain sites affected by stroke wherein the cells are injected in an area inferior to the stroke, within the midportion of the stroke and in an area superior to the stroke. Similarly to claim 7, claim 20 expressly discloses, *inter alia*, the limitation of a method of treating morbidity in a human due to stroke which results in at least one of a decrease in cognitive function, motor function, sensory function, and **speech function**.

MPEP §2111.02 states that where the preamble of a claim is a statement of the intentional purpose for which the method is performed as opposed to merely a statement of effect that may or may not be desired or appreciated, the preamble is a structural limitation that can be used to overcome the prior art. MPEP §2141.02(I) states the claimed invention must be considered as a whole. MPEP §2141.02(V) states when delineating the invention as whole, it is necessary to look not only to the subject matter literally recited in the claims but also to those properties of the subject matter which are inherent in the subject matter and disclosed in the specification.

An express limitation of amended claim 7 and 20 is a method of improving speech. The Office asserts on page 9 that since speech is known to be one of several motor components affected by stroke and further asserts on page 10 that it would have been obvious for one of ordinary skill in the art to treat stroke which “interferes with speech” as this is a type of motor disorder caused by stroke. Applicant respectfully traverses this assertion on the basis that speech involves both a cognitive component utilizing specific areas of the brain as well as a motor component; the cognitive component for speech is missing in rodents and all of the references cited by the Office

used rodents, not humans. It cannot be said that rodents are capable of speech and thus the cited combination of references cannot possibly disclose a method of improving speech as is expressly disclosed in claim 7. Speech is the use of vocal sounds that form words to convey thoughts or express ideas and is limited to higher mammals such as humans. The use of speech requires the use of mental faculties as well as the vocal component. Humans utilize different areas of the brain in forming speech such as Broka's area and Wernicke's area as well as the vocal chords. Implicit in the use of speech is a cognitive function that perceives words as well as a motor function that allows vocalization of the words. "Improving speech" is meant to imply rehabilitation of **both** the cognitive and the motor components of speech, not just the motor function as asserted by the Office. As stated *supra*, speech is a concept limited to higher mammals such as humans and is not applicable to rodents such as rats and mice. Since the cited combination of references all disclose the use of rodents and none of the references nor their combination mentions improving speech, the cited combination cannot be said to obviate.

Claims 22-30 are directly or indirectly dependent on claim 20 and are allowable as a matter of law upon the allowance of claim 20. Applicant respectfully requests that the rejection of claims 7, 20 and 22-30 be withdrawn.

*Sanberg 1996 fails to teach administration of at least 6 million hNT cells within three hours of cell preparation to a plurality of brain sites in a human affected by stroke wherein the cells are injected in at least one tract to an area inferior to the stroke, within the midportion of the stroke and in an area superior to the stroke and Sanberg 1997 and Weiss and Uchida fail to resolve that deficiency*

Amended claims 7, 10, and 13 of the present application all recite administration of at least 6 million hNT cells within three hours of cell preparation to a plurality of brain sites **affected by stroke wherein the cells are injected in at least one tract to an area inferior to the stroke, within the midportion of the stroke and to an area superior to the stroke**. None of the references, nor the combination of references discloses the administration of cells to a plurality of brain sites affected by stroke wherein the cells are injected in at least one tract to an area inferior to the stroke, within the midportion of the stroke and to an area superior to the stroke. The deficiencies of Weiss and Sanberg 1997 were discussed *supra* with regard to this limitation.

Similarly, Sanberg 1996 and Uchida also fail to disclose this limitation. Sanberg 1996 does not disclose the number of tracts the cells are administered to nor does it disclose the specific locations to which the cells are administered. Uchida discloses the transplantation of neural plate tissues into two sites of the brain, however Uchida does not disclose the administration of cells to an area inferior to the stroke, within the midportion of the stroke and to an area superior to the stroke. Similar to Example 45 of Weiss, Uchida transplants the neural plate tissues into **normal, healthy** mice, not humans affected by stroke. Given that none of the references individually nor in combination disclose the injection of cells in at least one tract to an area inferior to the stroke, within the midportion of the stroke and to an area superior to the stroke, the cited combination cannot be said to obviate.

*Sanberg 1996 fails to teach administration of at least 6 million hNT cells within three hours of cell preparation to a human who has endured a stroke and Sanberg 1997 and Weiss and Uchida fail to resolve that deficiency*

An express limitation of claims 7, 10, 13, 14, 15, and 17 is the administration of at least 6 million hNT cells within three hours of cell preparation to a human who has undergone a stroke. As stated above with respect to the rejection of claims 1, 2, 4, 17, 20, 22-28 and 30 over Weiss in view of Sanberg 1997 and Grabowski, Weiss and Sanberg 1997 fail to disclose the delivery of at least 6 million cells within 3 hours of their preparation. Weiss explicitly states in Example 45 that the cells are prepared 16 hours prior to transplantation. (col. 61, lines 60-61) Sanberg 1997 does not disclose time periods after cell preparation for the administration of the cells. Uchida discloses the transplantation of neural tissue, however as discussed supra, the tissue in Uchida was transplanted into normal, healthy mice, not humans who had undergone stroke. Given that the cited combination does not disclose, and Weiss explicitly teaches away from, the administration of cells within 3 hours of preparation to a human who has undergone a stroke, the cited combination cannot be said to obviate.

Claim 12 is dependent upon claim 10 and is allowable as a matter of law upon the allowance of claim 10. Claim 16 is dependent upon claim 14 and is allowable as a matter of law upon the allowance of claim 14. Claim 19 is dependent upon claim 15 and is allowable as a matter of law upon the allowance of claim 15. Applicant therefore respectfully requests that the rejection of

claims 7, 10, 12-17 and 19 be withdrawn.

*Sanberg 1996 fails to teach the administration of 6 million hNT cells to a plurality of sites in the central nervous system or the cerebral spinal fluid and Sanberg 1997 and Weiss and Uchida fail to resolve that deficiency*

Claim 14 is directed to, “[a] method of improving sensory function in a person who has experienced stroke-induced brain damage which interferes with sensation, said method comprising delivering a sterile composition of at least 6 million hNT neuronal cells within three hours of cell preparation to a plurality of sites of the central nervous system or to the cerebral spinal fluid.” With regard to claim 14, the Office notes on page 9 that since the EBST requires sensory input, Sanberg 1996 is on point to obviate the claim. Applicant respectfully notes that the Office did not address the arguments presented by Applicant with regard to claim 14 in the response dated November 4, 2009 regarding delivering the cells to a plurality of sites in the central nervous system or cerebral spinal fluid thus Applicant respectfully reiterates these arguments here. Applicant respectfully reasserts that neither Sanberg 1996 nor Sanberg 1997 nor Weiss nor Uchida teaches the administration of cells to a **plurality of sites in the central nervous system or cerebral spinal fluid**. Further, as stated *supra*, the cells in Example 45 of Weiss as well as the tissue transplanted in Uchida were administered to normal healthy animals. All of the references are directed to the administration of cells to the brain, not the entire central nervous system and not the cerebral spinal fluid. Also, as stated above, none of the references teach the administration of at least 6 million hNT cells within 3 hours of cell preparation. Given that the cited combination of references fails to teach each and every element of the claims in question, there can be no finding of obviousness.

Claim 16 is dependent on claim 14 and is allowable as a matter of law upon the allowance of claim 14. For the foregoing reasons it is therefore respectfully requested that the rejection of claims 14 and 16 under 35 U.S.C. § 103(a) be withdrawn.

*Sanberg 1996 fails to teach migration of cells and Sanberg 1997 in view of Weiss and Uchida fail to resolve that deficiency*

Claim 15 is directed to “[a] method of improving sensory, motor or cognitive function in a person who has experienced brain damage due to a stroke which interferes with those functions, said method comprising delivering a sterile composition of at least 6 million hNT neuronal cells within 3 hours of cell preparation into a plurality of locations from which the hNT neuronal cells migrate to the damaged area.” Neither Sanberg 1996 nor Sanberg 1997 nor Weiss teach migration of cells to the damaged areas. The Office uses the Uchida reference to overcome this deficiency; however Uchida is equivocal as to whether or not the cells migrate. (page 207) The Office acknowledges on page 10 that Uchida indicates that one or more mechanisms may occur but states that the reference still provides guidance to perform the method of claim 15 and also provides a reasonable expectation of success. MPEP §2142 states that rejections under 35 U.S.C. §103(a) cannot be supported with “mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” Applicant respectfully brings to the Office’s attention that the Office has not articulated specifically the guidance that Uchida discloses to support the method of claim 15 and further does not articulate a finding of reasonable expectation of success. Therefore, the Office has not established a *prima facie* case of obviousness.

It is also noteworthy that the mobility experiments in Uchida were conducted *in vitro* as opposed to *in vivo*. In fact, Uchida states that *in vivo* studies are needed to actually determine if there is mobile behavior involved. Given that the combination of Sanberg1996 in view of Sanberg 1997 in further view of Weiss and Uchida fails to teach the element of migration as dictated in claim 15, in addition to the shortcomings of failing to teach administration of at least 6 million hNT cells within 3 hours of cell preparation into a plurality of locations as discussed previously, the cited combination fails to render the present application obvious.

In conclusion, for the foregoing reasons, it is therefore respectfully requested that the Office withdraw the rejection of claims 7, 10, 12-17 and 19 under 35 U.S.C. § 103(a).

***Conclusion***

For the reasons cited above, Applicant believes that claims 1-2, 4, 7, 10, 12-17, 19, 20, 22 and 24-30 are patentable and in condition for allowance.

If the Office is not fully persuaded as to the merits of Applicant's position, or if an Examiner's Amendment would place the pending claims in condition for allowance, a telephone call to the undersigned at (813) 925-8505 is requested.

Very respectfully,

SMITH & HOPEN

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**CERTIFICATE OF ELECTRONIC TRANSMISSION**

(37 C.F.R. 1.8(a))

I HEREBY CERTIFY that this Amendment G is being electronically transmitted to the United States Patent and Trademark Office through EFS Web on July 29, 2010.

Date: July 29, 2010

/lauren reeves/  
Lauren Reeves